UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/903,504	07/13/2001	Pierre S. Boudier	2198.0110000	1764

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EXAMINER
ARNOLD, ADAM

ART UNIT	PAPER NUMBER
2671	

DATE MAILED: 04/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 January 2004*.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
   closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3,5-21,23-42 and 44-63* is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,5-21,23-40,42,44-61 and 63* is/are rejected.

7)☒ Claim(s) *41 and 62* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

   Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   a)☐ All   b)☐ Some * c)☐ None of:

   1.☐ Certified copies of the priority documents have been received.

   2.☐ Certified copies of the priority documents have been received in Application No. _____.

   3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
      application from the International Bureau (PCT Rule 17.2(a)).

   * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
   Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

The examiner acknowledges the receipt and entry of the applicant's amendment.

Claim Rejections - 35 USC § 103

1.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2.   Claims 1-3, 5-19, 21, 23-37, 39, 40, 42, 44-58, 60, 61 and 63 are rejected under 35 U.S.C.

103(a) as being unpatentable over Hopcroft, U.S. Patent No. 6,154,215. Referring to claim 1,

Hopcroft discloses a system for optimization of a scene graph (col. 2, lines 56-58), comprising:

an optimization base with logic for at least one atomic optimization (see Figure 12, where the

diamond shapes represent the atomic optimizations); an optimization registry listing the atomic

optimizations (col. 11, lines 5-30) including priority information (col. 11, lines 33-40); an

optimization manager for creating, configuring and applying an optimization process (See Figure

12 and col. 3, lines 56-57, where a "computer system upon which the present invention may be

practiced is shown...") and an optimization configuration manager for accepting user

configuration information (col. 2, lines 32-38) where the user configuration information

comprises a selection of an atomic optimization (col. 2, lines 32-38). Although Hopcroft does

not explicitly disclose listing parameter information associated with the optimization, this can be

implied from col. 11, first paragraph beginning on line 5. For example, in step 1202 where

nodes are deleted, the parametric information can be the specific node. At the time the invention

was made, it would have been obvious to a person of ordinary skill in the art to list parameter information associated with an optimization. One of ordinary skill in the art would have been motivated to do this to allow for more control over the optimization process.

Referring to claim 2, Hopcroft discloses a user interface through which a user can provide configuration information to the optimizer (col. 4, lines 55-58).

Referring to claim 3, Hopcroft discloses where the user interface is provided by a modeler which produces the scene graph (col. 2, lines 50-54).

Referring to claim 5, the remarks presented above with respect to claims 1 and 4 apply equally to this claim.

Referring to claim 6, Hopcroft discloses where the atomic optimization comprises a collapse geometry (Figures 3A, 3B and 3C, where the geometric blocks have been reduced from 3B to 3C).

Referring to claim 7, Hopcroft discloses where the atomic optimization comprises a collapse hierarchy (col. 11, line 14).

Referring to claim 8, Hopcroft discloses where the atomic optimization comprises a convert image optimization (col. 3, line 66).

Referring to claim 9, Hopcroft discloses where the atomic optimization comprises a convert transform (col. 3, line 63).

Referring to claim 10, Hopcroft discloses where the atomic optimization comprises a bounding box (col. 4, line 24, literally bounding "sphere").

Referring to claim 11, Hopcroft discloses where the atomic optimization comprises a flatten hierarchy (col. 11, line 14).

Referring to claim 12, Hopcroft discloses where the atomic optimization comprises a generate macro texture (col. 10, line 45).

Referring to claim 13, Hopcroft discloses where the atomic optimization comprises a normalize texture coordinates (col. 10, line 45).

Referring to claim 14, Hopcroft discloses where the atomic optimization comprises a promote attribute (col. 10, line 45).

Referring to claim 15, Hopcroft discloses where the atomic optimization comprises a remove attribute (col. 10, line 45).

Referring to claim 16, Hopcroft discloses where the atomic optimization comprises a resize image (col. 6, lines 16-20, where the "geosets" are sections of an object).

Referring to claim 17, Hopcroft discloses where the atomic optimization comprises a shared attributes (col. 8, line 25).

Referring to claim 18, Hopcroft discloses where the atomic optimization comprises a spatial partition (col. 11, line 8).

Referring to claim 19, Hopcroft discloses where the atomic optimization comprises a strip triangles (col. 5, line 42 and see also the rejection to claim 16 above).

Referring to claim 21, the remarks presented above with respect to claim 6 apply equally to this claim.

Referring to claim 23, Hopcroft discloses a method of optimization of a screen graph comprising receiving an input scene graph (col. 2, line 45), creating an optimization process (col. 2, line 58) and optimizing the scene graph in order to increase efficiency of data manipulation,

inter alia (col. 2, line 59). Otherwise, the remarks presented above with respect to claim 1 apply

equally to this claim.

Referring to claims 24-37 and 39, the remarks presented above with respect to claims 6-

19 and 21, respectively, apply equally to this claim.

Referring to claim 40, Hopcroft further discloses the step of performing post-optimization

processing (e.g. display, col. 4, line 46).

Referring to claim 42, Hopcroft discloses outputting an optimized scene graph (col. 11,

line 6).

Referring to claim 44, Hopcroft discloses computer code (col. 3, line 59) for

implementing the invention described in claim 22 above. Otherwise, the remarks presented

above with respect to claim 23 apply equally to this claim.

Referring to claims 45-58 and 60, the remarks presented above with respect to claims 6-

19 and 21, respectively, apply equally to this claim.

Referring to claim 61, the remarks presented above with respect to claim 40 apply

equally to this claim.

Referring to claim 63, the remarks presented above with respect to claim 42 apply

equally to this claim.

3.   Claims 20, 38 and 59 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Hopcroft as applied to claims 1, 23 and 44 above, and further in view of Sowizral, Pub. No.

US2002/0063704 A1. Referring to claim 20, Hopcroft does not disclose where one of the atomic

optimization comprises a transform alpha optimization. Sowizral discloses where one of the

rendering attributes is an alpha test operation (paragraph 234, line 9). At the time the invention

was made, it would have been obvious to a person of ordinary skill in the art to rescale alpha

values. One of ordinary skill in the art would have been motivated to do this to increase

flexibility in the rendering of images.

Referring to claim 38, the remarks presented above with respect to claim 20 apply

equally to this claim.

Referring to claim 59, the remarks presented above with respect to claim 20 apply

equally to this claim.

Allowable Subject Matter

4.   Claims 41 and 62 are objected to as being dependent upon a rejected base claim, but

would be allowable if rewritten in independent form including all of the limitations of the base

claim and any intervening claims.

5.   The following is an examiner's statement of reasons for allowance: The prior art does not

anticipate, nor does it suggest, the system as claimed in claims 41 and 62. The prior art of record

does not disclose performing validity checks on the optimized scene graph or creating statistics

based on the optimization process.

The above indicated limitations, particularly in combination with the other limitations in

the respective claims are not anticipated or suggested by the prior art.

Any comments considered necessary by applicant must be submitted no later than the

payment of the issue fee and, to avoid processing delays, should preferably accompany the issue

fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for

Allowance."

Response to Arguments

Applicant's arguments filed January 7, 2004 have been fully considered but they are not persuasive. The applicant argues in the last full paragraph of page 10 that Hopcroft does not disclose an optimization manager that creates and configures an optimization process, but only discloses the logic of an optimization process. The examiner disagrees, citing column 3, lines 56-57 which disclose a computer system for practicing the invention, which is to create and configure an optimization process. The applicant argues in the first (partial) paragraph of page 11 that claim 1 has been amended so that the user configuration information includes selection of one or more atomic optimizations. This limitation was in the now cancelled claim 4 of the original application and rejected therein. Finally, in the third full paragraph on page 11, the applicant contends that claim 23 as amended includes the step of receiving user input identifying an atomic optimization and any associated parameters. This limitation was in claim 23 of the original application and was rejected therein.

The rejection to these claims stands.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing

date of this final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to **Adam Arnold** whose telephone number is **703-305-8413**. The

examiner can normally be reached Monday-Thursday between 7:00 AM and 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Mark Zimmerman, can be reached at (703) 305-9798.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive,

Arlington, VA, Sixth Floor (Receptionist).

MARK ZIMMERMAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600